EQUITY IN EDUCATIONAL EXPENDITURES IN THE MIDDLE EAST AND NORTH AFRICA

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EQUITY IN EDUCATIONAL EXPENDITURES IN THE MIDDLE EAST AND NORTH AFRICA*

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Abstract

Educational policies affect access to schooling, and consequently, determine jobs and income, both of which in turn affect the distribution of income and wealth in the society. Therefore an equitable distribution of educational benefits is important. This study is concerned with equity in the distribution of benefits to the people who are being educated at different levels of education. These evaluations are performed using the figures for public spending for people passing through the school system at different levels. Familiar Gini coefficients are computed to evaluate the equity in the distribution of benefits by level of study. Comparable data are used to carry out computations for the Middle East-North Afrcian countries and for major regions of the world. Computations are done for 1980 and 1990 to observe changes over time. Individual MENA countries are evaluated from a regional perspective, compared to other regions of the world, and the change over the decade is evaluated. The results suggest that the tertiary level unit costs are substantially higher than at other levels, and there is substantial inequity in the distribution of public benefits among individuals exiting the educational system with different educational attainments.

ملخص

تؤثر سياسات التعليم في فرص الالتحاق بالتعليم المدرسي، وبالتالي فإنها تحدد نوعية الوظائف ومستوى الدخول، وهما عاملان يؤثران بدورهما في توزيع الدخل والثروة في المجتمع. لذا فإن للتوزيع العادل لامتيازات التعليم أهمية خاصة. وتعالج هذه الورقة العدالة في توزيع الامتيازات على من يتلقون تعليمهم في مستويات التعليم المختلفة. وتتم هذه التقييمات باستخدام أرقام خاصة بالانفاق العام للأشخاص الذين يمرون بالنظام المدرسي على مستوياته المختلفة. كما تُحسب معاملات جيني المعروفة لتقييم العدالة في توزيع الامتيازات وفقاً للمستوى الدراسي. وعن طريق بيانات قابلة للمقارنة يتم القيام بالحسابات لدول الشرق الأوسط وشمال افريقيا ولأهم أقاليم العالم. وتستخدم حسابات عامي ١٩٨٠ و١٩٩٠ لمراقبة التغييرات عبر الزمن. وتقيَّم دول الشرق الأوسط وشمال افريقيا من وجهة نظر اقليمية، وذلك بالمقارنة بأهم أقاليم العالم، كما يتم تقييم التغيير الذي طرأ خلال العقد المذكور. وتشير النتائج إلى أن تكلفة الوحدة على مستوى قطاع التعليم ما بعد الثانوي أعلى منها بكثير عن الانفاق على المستويات الأخرى، كما أن هناك عدم إنصاف واضح في توزيع الامتيازات العامة على الأفراد الذين يتركون النظام التعليمي حسب مستويات التعليم المختلفة.

1. INTRODUCTION

Education produces several socially desirable goals. These goals include improved individual productivity in terms of higher wages resulting in improved income distribution, improved health and nutrition due to better sanitary and cooking practices, and reduced fertility by proper implementation of contraceptive techniques and by raising age at marriage. Education also prepares individuals for better citizenship and support for democracy. The latter of these effects are often referred to as externalities of education. The externality argument contends that education benefits the society as a whole more than the individuals and the markets fail to provide the socially desirable amounts of educational services. This is the main reason for public provision of educational services at all levels of schooling in all countries. In the MENA (Middle East and North Africa) countries as it is in many developing countries education is mainly provided and financed by the government.

When scarce resources are used in the provision of education who pays for and who benefits from this public service becomes an important question. Educational policies affect access to schooling and consequently determine jobs and income both of which in turn affect the distribution of income and wealth in the society. Therefore, equitable distribution of educational benefits is important. This study will investigate equity in educational expenditures at different levels of schooling in the MENA countries. For each of the MENA countries the unit costs at different levels of study and the familiar Gini coefficients indicating the equity in the distribution of resources among different levels of education are computed. The use of Gini coefficients for this purpose is introduced by Mingat and Tan (1985) and World Bank (1986). Analysis are carried out using the data for 1980 and 1990 to observe the changes over time. Computations are also done individually for the world countries for 1980 and 1990 which are then averaged to obtain the figures for the major regions of the world for the purposes of comparisons with the MENA region. UNESCO publications are the main sources of the data used in this study. The analysis suggest that for the oil producing countries the unit cost at all levels exceed the regional average while for the rest of the MENA countries the unit costs at all levels are far below the regional average. The rather high Gini coefficients observed for the region indicated high inequity in the distribution of resources among different education levels which has worsened in 1990 as compared to 1980.

The organization of the paper is as follows. Section 2 will discuss the methodology. Section 3 gives an overview of the enrollment ratios and the educational budgets in the MENA countries during the past three decades. It will also display the unit costs at different levels of schooling and the inequity in the distribution of public resources among different levels of schooling using the Gini coefficients. Policy implications and conclusions appear in Section 4. Appendix A gives the list of the world countries included in the computations.

2. METHODOLOGY

Equity and efficiency considerations are often used to evaluate the education sector. The concern of this paper is the equity in the distribution of educational benefits in the MENA countries. The classical approach to the equity issue in education is to investigate the various characteristics of the people who benefit from the services of this sector. Often those who get into school and the general population are compared with respect to their socioeconomic or ethnic background or geographic

location [Coleman (1966) and Mingat and Tan (1986)] and the reasons for unequal opportunity in access to education are evaluated. It is important to determine the incidence of educational benefits by socio-economic background especially at the tertiary level. Other approaches to equity in education took various forms. Heynaman and Loxley (1983) evaluate the primary school quality on academic achievement. Hansen and Weisbrod (1969) and Jallade (1974) compare the public resources utilized by the tertiary level students of various economic backgrounds and the tax contributions by their respective parents. Bowman et al. (1983) compare the life-time tax contributions of individuals who receive educational benefits at different levels of education. Other authors who have addressed similar issues include Bowles (1967), Daugherty and Psacharopoulos (1977), Fields (1974), Ram (1982) and Tilak (1987 and 1993).

This study will approach the equity considerations in education in terms of the distribution of benefits among different levels of study for a given generation. This is an issue widely debated recently by researchers such as Mingat and Tan (1985), T.P. Schultz (1988), T.W. Schultz (1972), Psacharopoulos and Woodhall (1985), Tan and Mingat (1992) and World Bank (1986). Comparing the distribution of public resources among different levels of study. Involves evaluation of the enrollment structure at different levels of study and the structure of unit public cost of education at these levels.[1] The unit cost of education at a particular level is measured by the public resources allocated per student at that level. The public resources accruing to a group of individuals with terminal degrees at a certain level of study are the cumulative cost of their entire student life. An overall measure of equity is best summarized by computing a Gini coefficient between the proportion of the population at different levels of education and the proportion of benefits appropriated by these groups (Mingat and Tan, 1985; World Bank, 1986).

3. ENROLLMENT RATIOS AND EDUCATIONAL EXPENDITURES

Enrollment Ratios and Literacy Rates:

The MENA region is not comprised of a homogenous group of countries. There are significant variations among the countries in the region with respect to their economic and social achievements. The economies of the countries are diverse ranging from high-income oil-rich, Kuwait, Qatar and United Arab Emirates (UAE) to upper-middle-income Libya and Low-income, Egypt and Morocco (according to the classification in World Bank (1993)). This section will give an overview of the enrollment ratios and the educational budgets in the MENA region over the past two and a half decades. The enrollment ratios[2] at different levels of education are given in Table 1. There are substantial improvements in the enrollment ratios at all levels of education. The regional average of the primary enrollment ratio rose from 76 in 1965 to 97 in 1990 while the secondary enrollment ratio has tripled and the tertiary enrollment ratio has increased five times during the same period. Educational attainments are expected to grow faster in the MENA region than in the other regions over the coming decades[3]. However there are important differences among the countries. Although, several of the countries achieved universal primary education by 1990 or are close to achieving it, countries like Morocco, Saudi Arabia, and the Yemen republics lag significantly behind in this respect. In terms of the tertiary level enrollments Egypt, Israel, Jordan, Lebanon and Qatar are the high achievers while Oman, Tunisia and Yemen republics have tertiary enrollment ratios less than 10 percent.

The cumulative impact of past investments in education can be summarized with Adult Literacy rates. Adult Illiteracy rates are also given in Table 1. The adult literacy rate for the MENA region is 55 in 1990 which is much higher than in 1965. There is significant variation among the countrys' achievements in this respect. In Turkey 81 percent of the adults are literate whereas in Yemen A.R. only 38 percent of the adults are literate. In Jordan where lower secondary enrollments are universal, the adult literacy rate is 80 percent in 1990.

There are significant variations in the educational policies followed among the countries which is responsible for the current literacy rates and enrollment ratios. Two extreme examples are Egypt and Turkey. While Egypt did not achieve universal primary education until recently and the adult literacy stands at 48 percent in 1990, the secondary and tertiary enrollment ratios are higher in Egypt than in Turkey. Turkish governments made committments to enforce compulsory primary education and universal coverage, thus succeeded in increasing the adult literacy rate to 81 percent in 1990. However, secondary and tertiary enrollment ratios in Turkey lag behind that of Egypt. Tertiary enrollment ratio of Turkey in 1990 is less than the regional average and the secondary enrollment ratio is exceeded by only that of Iraq, Morocco, S.Arabia, Syria, Tunisia and the Yemen republics. Rural and urban disparities in enrollment ratios (Chowdhury, 1993) as well as the gender disparities (Cochrane, et al., 1986; El-Sanabary, 1993; Shafik, 1994; Jalan and Subarao, 1994) are the noted educational problems of the region. Mena shows one of the largest gaps between male and female enrollments.[4] Not only the enrollment ratios are much smaller in the rural areas than in the urban areas, the sharp gender differentials are in particular wide in the rural areas.

Differences in the enrollment ratios among the countries could be due to a number of factors such as, level of economic development, educational policies, educational investment priorities, and historical and cultural factors. It is possible to control for the level of economic development in a regression framework by using GNP per capita as an indicator of economic development by estimating a relationship between enrollment ratios at different levels of education (given in Table 1) and the GNP per capita (given in Table 4-B). Substituting each country's actual per capita GNP into the estimated equations yields predicted enrollment ratio[5]. The difference between actual and predicted enrollments could be interpreted as reflecting the country-specific factors. They could also be used to ascertain the relative priority given to different levels of education. Actual and predicted enrollments for 1990 are shown in Appendix B, Table 1. We can interpret the large positive deviations at the tertiary level for Egypt, Israel, Jordan, Syria and Turkey as indicating a strong priority given to the tertiary level of education in these countries.

Educational Expenditures:

The total education expenditures as percent of GNP in 1965, 1980 and 1990 are given in Table 2. The proportion of GNP spent on education increased markedly from 1965 to 1990 for all of the countries. For the MENA region as a whole it increased from 3.9 percent to 5.7 percent. In 1990 the percent of GNP spent on education in the MENA countries varied widely from over 10 percent for Libya to about 3 percent for Turkey and 2 percent for UAE. As for the distribution of educational expenditures at various levels of education as percent of GNP, it varied among the countries and in general, showed an increase at the secondary level from 1965 to 1990 and a decline at the tertiary level from 1965 to 1990 (not shown).

Table 3 shows the educational budgets as percent of the total government budgets in 1965, 1980 and 1990 in the MENA countries and major regions of the world. Education is a significant item of expenditure in the budgets of the MENA countries as in the budgets of many developing countries. Most of sub-Saharan African countries also have large budgetary allocations to education. The educational budgets in the MENA region as percent of the total government expenditures vary from 27 percent for Algeria to 7.2 percent for Qatar in 1990. For many MENA countries there was a decline in the educational budgets as percent of total public budget from 1965 to 1980 and an increase to 1990. The countries that experienced substantial declines from 1965 to 1980 were Egypt, Israel, Lebanon, S.Arabia, Syria, Tunisia, Turkey and UAE. In spite of the decline in educational budgets, 1960-1980 was a period of substantial improvements in the enrollment ratios in the region as well as in many parts of the world. The quality of education may have suffered as a result of the expansion in coverage and decline in public outlays.[6]

Unit Costs at Different Leves of Education:

The distribution of the educational expenditures among different levels of study vary widely. On the average 25-30 percent of the total educational expenditure goes to tertiary level. The general pattern is that the per student educational expenditures increase with the level of education. Considerably higher per student expenditures occur at the tertiary levels than at the other levels of schooling. Table 4 gives the average unit cost per student as percentage of GNP per population of age 6-24 years at different levels of education for the MENA countries and the major regions of the world. Most authors dealing with unit costs of education use unit cost per student as a percentage of GNP per capita. However we think it is intuitively more appealing to use unit cost per student as a percentage of GNP per population 6-24 years of age since this is the age group expected to be in school. For this to make sense we must not have people over 24 years of age enrolled at the three levels of education. We have examined this for a number of countries in our sample using Unesco (1993) sources. The percentage of population over 24 years of age enrolled in primary and secondary levels of study ranges from less than 1 percent in Israel to 2.97 percent in Jordan. The similar figures for higher education are slightly higher but none exceeds 5 percent. These figures further justify using GNP per population aged 6-24 in place of GNP per capita. Henceforth, GNP per population of 6-24 years of age as divisor of the unit cost per student will be referred to as unit costs in terms of GNP per capita for brevity.

In all of the MENA countries the average unit cost per student as a percentage of GNP per capita at the tertiary level is very high as compared to other levels of education. This figure ranges from a high of 2.11 for Qatar to a low of 1.19 for Algeria in 1980 while in 1990 lowest unit cost is achieved by Libya with 1.22 and highest is again for Qatar with 2.22. In general oil rich countries have the highest unit costs at all levels of education. In Tunisia the unit cost per student as a percentage of the per capita GNP at the tertiary level is 27 times in 1980 and 11 times in 1990 that of the cost of a student at the primary level. These numbers mean that, for the equivalent cost of educating one university student for one year, 27 primary school students in 1980 and 11 primary school students in 1990 could have received a year of schooling in Tunisia. Since the ratio of primary school students to tertiary level students is above 100 to 1, we can conclude that Tunisia spends a large proportion of its educational budget on a very small proportion of students enrolled at the tertiary level. For the MENA countries as a whole the secondary school unit costs are more than twice that of the primary level. While the tertiary level unit costs showed a small increase, the

primary and secondary level unit costs in general tripled from 1980 to 1990, in the MENA countries.

There is substantial variation among the MENA countries tertiary level unit costs relative to primary level unit costs. In 1980, the tertiary level unit cost was 40 times that of the primary level in Algeria. For the oil rich countries they were about 5 times. It was only 8 times in Kuwait and 9 times in Iran and 10 times for the MENA region. The same figures were 30 times in sub-Saharan Africa, nine times in East Asia, Pacific, 12 times in South Asia, 2 times in Europe, 7 times in Latin America, Caribbean and 4 times in OECD countries.

The differences the unit costs as percentage of per capita GNP among different levels of study are less in 1990 than in 1980. For instance, for Algeria tertiary level education costs only 12 times (rather than 40) that of the primary level in 1990. It is 11 times for Tunisia, five times for Egypt and Kuwait and only twice for Jordan in 1990. For the oil producing countries it was reduced from about five times to about 3 times. The same figure was nine times in 1980 and four times in 1990 for the MENA region. A similar reduction in the per unit costs of the tertiary level as compared to the secondary level are experienced from 1980 to 1990 in all of the MENA countries. For the MENA region tertiary level unit cost was three times that of the secondary level unit cost in 1980 and only twice that of the secondary level unit cost in 1990. These relative reductions are mainly due to the almost tripling of the unit costs at the primary and secondary levels from 1980 to 1990; while the tertiary level increases in the unit costs were relatively small producing a unit cost structure that is steeper in 1980 than in 1990.

The unit costs for Europe are higher in 1990 than in 1980. There is balance in unit costs across different levels of education in both years. The European tertiary level unit costs are much smaller than the corresponding figures for MENA in both years. MENA unit costs in 1980 and in 1990 are higher than in South Asia and East Asia, Pacific at all levels. Tertiary level unit costs are the highest in sub-Saharan Africa.[7]

Table 5 shows the deviation of unit costs in terms of GNP per capita from the regional mean in the MENA countries. The figures for Algeria, for instance, mean that Algeria spends 83 percent less than the regional average at the primary level and 82 percent and 27 percent less than the regional average at the secondary and tertiary levels of education respectively, in 1980, while the differences from the regional average are reduced in 1990 at all levels. Similarly, Qatar spends 156, 129 and 30 percent more than the regional average at the primary, secondary and the tertiary levels of education respectively, in 1980. Thus, two groups of countries emerge. For Algeria, Egypt, Iran, Iraq, Jordan, Kuwait, Libya, Syria, Tunisia, Turkey and Yemen the unit costs are below the regional average and the differential is substantial in particular at the primary level. For Morocco and for the oil-rich countries such as Oman, Qatar, Saudi Arabia and UAE unit costs exceed the regional average by large margins (except for Morocco) and they seem to spent substantial amounts on primary education. For the countries in the first group there is evidence of bias in favor of tertiary education. For instance, Turkey in 1990 spent 33 percent less than the regional average at the primary level but, 13 percent more than the regional average at the tertiary level.

Cost Bias Index:

In this section we construct an overall index of bias in the educational cost structure. This index is shown in the last columns of the Tables 5A and 5B for 1980 and 1990 respectively. It is constructed as the difference between the average deviation of tertiary from secondary level unit costs from the regional means and the average deviation of the secondary from primary level unit costs from the regional means.[8] This index indicates the extent to which the unit cost deviates from the regional averages as the level of education rises from primary to tertiary level. When deviatiations from the regional mean increase from primary to higher education this leads to a large positive number for the cost bias index which indicates a high degree of bias toward tertiary education. A large negative number indicates a bias toward primary and secondary education. Finally, a number close to zero shows a relatively balanced allocation of educational resources among the three levels of education.

For some countries the deviations from the MENA averages increase dramatically with rising level of education leading to a large positive number for the cost bias index indicating a bias toward higher education. This is most apparent for Algeria, Egypt, Iraq, Jordan, Libya, Syria, Tunisia, Turkey and Yemen A.R. in 1980. The pattern is similar in 1990 with a few exceptions. For Turkey and Yemen the deviations increase dramatically as we move from primary to tertiary education indicating high degree of bias toward higher education in 1990. For Egypt, Kuwait, Libya and Syria the patterns are relatively balanced with Egypt having the most balanced structure in 1990. For Jordan, Oman, Qatar, Saudi Arabia and UAE the deviations decrease as the level of education increases indicating more resource intensity at the primary and secondary levels. These indicate that the oil rich countries give importance to primary education more than the rest of the countries in the region. In Iran, Morocco and Turkey there have been major shifts in bias toward higher education between 1980 and 1990 while in Egypt and Syria there seem to be a more balanced pattern in 1990 than in 1980.

Gini Coefficients:

As Table 4 indicates unit cost in terms of per capita GNP increases rapidly with the level of education. For MENA the school enrollment ratio is about 16 percent at the tertiary level. That is, 16 percent of the university age population (20-24 years of age) participate in the tertiary education in the MENA region. Further there is a cumulative effect of the public benefits, those who enroll at the university level benefit also from the public expenditures at the primary and secondary levels. The distribution of cumulative expenditures on education received by individuals over school age can give an idea about the inequality in the distribution of public funds. Gini coefficient summarizes the share of public expenditure on education shared by the individuals out of the school ranked according to their level of education.[9] Table 6 provides the Gini coefficients for the MENA countries in 1980 and 1990 for which data are available.[10] There are substantial variations in the Gini coefficients. They range from a high of .87 in S.Arabia and .78 in Kuwait and UAE to a low of .19 in Algeria in 1980. In 1990 the Gini coefficients were some what larger for most countries ranging from a high of 0.79 for Saudi Arabia and UAE to a low of 0.19 for Morocco and 0.37 for Algeria. The Gini coefficient for the MENA region increased from 0.468 in 1980 to 0.550 in 1990 suggesting a worsening of the equity in the distribution of benefits by education levels during this period[11]. The Gini coefficient for Europe did not change markedly from 1980 to 1990. It was 0.272 in 1980 and 0.297 in 1990 which is substantially lower than for the MENA region indicating more

equitable distribution of benefits across education levels in Europe. For the rest of the regions the Gini coefficients in 1990 were somewhat larger than in 1980.[12]

We note the, rather high Gini coefficients for the Gulf countries indicating high inequity in the distribution of resources among different education levels. One explanation may be the fact that the higher educational system in these countries is primarily run by foreign professionals for whom the salary structure is an average 40-50 percent higher than for the natives. This has forced these countries to allocate relatively higher percent of resources to higher education as compared to the other levels of education. For example, Qatar has a relatively high Gini coefficient of 0.72 in 1990 which is the result of a highly skewed distribution where 53 percent of the population aged 6-24 who have either primary or no schooling receive 27 percent of the resources while only about 10 percent of same the population receive over 40 percent of the resources.

For Morocco the Gini coefficient dropped from 0.32 in 1980 to 0.19 in 1990, indicating a more equitable distribution of resources in 1990 than in 1980. The reason for this is the improvement in resource distribution. In tertiary education while about 10 percent of the population took 18 percent of resources in 1980, about 12 percent of the population took 16 percent of the resources in 1990. This shows almost a 55 percent improvement towards more equitable resource allocation in the tertiary level of education. In addition, there were smaller improvements in the allocations to primary and secondary levels of education between 1980 and 1990. These all contributed to a smaller Gini coefficient in 1990 than in 1980 for Morocco. Although there is a balance in the allocation of resources among three levels of education and she spends more than the regional average at all levels, Morocco has rather low enrollment ratios and one of the highest literacy rates. This case needs further examination.

For the MENA region as a whole although there was a convergence in unit costs in 1990, the increase in the Gini coefficient indicates higher inequity in 1990 than in 1980.

In the secondary education while about 38 percent of the population received 35 percent of the resources in 1980, 44 percent of the population received only about 30 percent of the resources in 1990. This factor contributes to higher Gini coefficient in 1990 than in 1980 for the region.

4. POLICY IMPLICATIONS AND CONCLUSIONS

This paper examines the equity in the distribution of public educational expenditures at different levels of schooling in the MENA countries in 1980 and 1990. Comparisons to the other major regions of the world are also carried out. Several observations emerge. There is indication that there are significant variations in the enrollment and unit cost structures of the countries in the region. The countries can be grouped into oil-rich Gulf states on the one hand and the rest of the MENA countries on the other. In general, the unit costs as percentage of per capita GNP (referred to as unit costs henceforth) are very high at the tertiary level than at other levels of education. Oil rich countries have the highest unit costs at all levels of education. The tertiary level unit costs relative to the primary level unit costs were lower for the oil rich countries as compared to the rest of the MENA countries. For both groups of countries these figures were lower in 1990 than in 1980. For the oil rich countries the unit costs exceed the regional average in particular at the primary level while for the rest of the MENA countries the unit costs are far below the regional average in

particular at the primary level. This suggests that the oil rich countries give importance to primary education more than the rest of the countries in the region. Further, the MENA region countries show significant change from 1980 to 1990 in terms of the unit cost at different levels of education. The relative unit cost of education increases with the level of education. The rate of increase was sharper in 1980 than in 1990. Almost tripling of the primary and secondary level unit costs between 1980 and 1990 reduced the cost differential of these and the tertiary levels of education.

The unit cost structure and the enrollment patterns are evaluated by computing the Gini coefficients. The results indicate significant variation among the MENA countries and a movement towards less equitable distribution of public funds among different levels of education from 1980 to 1990. The highest Gini coefficients are observed for the oil rich countries. The rather high Gini coefficients for all the MENA countries indicate that, the educational expenditures are biased towards tertiary level of study. This emphasis on tertiary education at the expense of primary and secondary education, was pointed out to favor the "urban bourgeoisie" (El-Sanabary, 1993). The children of upper income families in Morocco are two times more likely to be enrolled in school compared to those from low-income families (Chowdhury, 1993). Mingat and Tan (1986) indicate that in the MENA countries the students with white-collar background benefit the most from tertiary education[13]. Thus, although relatively few wealthy are overrepresented at all levels of education they in particular benefit from high public expenditures at the tertiary level. Further, those who enroll at the university level benefit also from the public expenditures at the primary and secondary levels. Such considerations imply the need for generation and reallocation of resources towards primary and secondary education levels. When public funds are not available various funding schemes should be considered by the governments facing financial constraints.

In the countries where universal primary education is not achieved striving to achieve this is very important if the important benefits of education such as reduced fertility, improved nutrition and other externalities are to be realized. Social returns to primary schooling are found to be higher than to tertiary schooling (Schultz, 1991). In some of the MENA countries highest private returns are to primary education relative to secondary and tertiary educations. Over time, as the percent of the labor force with primary schooling increases, the private returns to primary schooling may decline as it has happened in some of the MENA countries[14,15].

As primary education expands the additional spending will be on the rural areas and the urban poor. This will not only improve the equity among different study levels but also improve the rural-urban regional equity and gender equity in education. Regional inequity is noted in many MENA countries. For instance, in Morocco primary enrollment rate is 90 percent in urban areas and only 48 percent in rural areas (Chowdhury, 1993). Unicef-Turkey (1994) notes that in the rural parts of the South-Eastern Turkey the proportion of girls drops to 25-30 percent after third grade. Thus, the geographic and gender disparities in the educational achievements and low school retention rates are the important issues that need to be addressed. The reasons for low survival rates in particular at the primary education level, in the rural areas and among girls must be investigated. Improving the access and the retention rates may mean improving the quality of the primary schooling offered. In the countries where universal primary education is already achived, the funds could be expended to improve the quality of primary schooling, to expand the coverage of the secondary schooling and/or to improve quality of secondary schooling. Again as before, such redistribution of funds will improve rural/urban equity, gender equity as well as equity among people with terminal degrees at

different levels of study. Improvements in literacy of the region will depend on current investments at the primary level in coverage and quality which should be extended to rural areas and females with efforts to improve survival rates.

Based on similar observations cost recovery programs at the tertiary education were suggested by several authors such as T.P. Schultz (1988), T.W. Schultz (1972), Psacharapoulos (1977 and 1982), Psacharapoulos and Woodhall (1985), World bank (1986) and Ransom (1988). Such policies would reduce the high unit costs of tertiary education and enable governments to use the savings on primary and secondary educations. The issue of shifting the part or all of the public cost of education to the individuals acquiring it or to their families is a politically difficult decision to make for many governments. It must be emphasized that equity within tertiary education will be adversely affected since students from poor backgrounds may find it difficult to attend due to both the direct and the indirect costs of attending school[16]. Discouraging effect of the cost recovery programs on prospective enrollments should also not be overlooked. Introduction of loan systems, selective scholarships and fee exemptions are possible schemes to reduce the adverse effects of cost recovery on the access to higher education. Thus, the inequity of access created at the tertiary level may be offset with the loan/scholarship programs and also with the improved access at the primary and secondary levels[17,18]. There have been examples of countries which increased the share of tuition charges in the recurrent tertiary educational costs. The rate of cost recovery was almost 50 percent in Korea and moderate amounts in Indonesia and Phillippines (Tan and Mingat, 1992). In Jordan increases in the tertiary level tuition fees enabled greater spending on primary and secondary education where lower secondary education is universal. In particular, the experience of Jordan merits further examination. There have been some tertiary level fee collection in Turkey since 1984, the proceeds of which however small are being used within the individual institutions. An evaluation of the cost recovery method and a discussion of the alternative revenue rising measures are provided by Colclough (1996).

MENA region rates of population growth are among the highest in the world. Young age structure of the population poses an important challenge to the provision of social services in particular that of education. There is also severe excess demand for higher education in some of the countries such as Turkey (Payaslioglu et al.,1990). To cope with this, countries followed different strategies. Turkey instituted an open university- a low cost, distance education system where enrollments increased to account almost 55 percent of the total tertiary level enrollments in 1996. Private universities are also allowed recently. However, they are far from being a low cost alternative in Turkey. Twice as much public monies per student are being spent at the private universities than at the public universities according to the budgetary allocations in 1996.[19,20]. In spite of the serious problems to be faced, the educational attainments are expected to grow most in the MENA region during the coming two decades (Ahuja and Filmer, 1995).

This paper points to the inequity in the distribution of public funds favoring tertiary education at the expense of primary and secondary education in MENA countries and the region. Such a distribution may be benefiting relatively few individuals who come from upper income backgrounds who in turn will receive high private returns to their schooling. This will tend to increase intergenerational transmission of inequality in income. The paper emphasizes the need for reallocation of resources to improve the coverage and the quality at the primary and the secondary levels of education regardless of the source of funds to be secured. The analysis in this paper must be complemented

with a study of the efficiency of the educational system in the MENA region by study level and by program type[21]. Identifying the most effective way of using resources to enhance coverage and quality in particular at the primary and secondary levels of education will improve equity. Broad conclusions of this study could be useful in formulating educational policies and must be supplemented with country-specific analysis as well as with the investigation of efficiency issues[22]. The educational problems facing the oil producing countries may be different from those facing the rest of the MENA countries. Future research could concentrate, in particular, on the characteristics of the educational system in each country responsible for the various forms of inequities. It would then be possible to develop specific educational policies for each country to improve the equity in various ways such as gender equity, regional equity, equity by socio-economic background as well as equity in the distribution of educational expenditures by level of education.

NOTES

1. In this paper we deal only with the inequity in the distribution of the public funds in education. There are some private schools at all levels of education in the MENA countries. In some countries private universities are ruled out by constitution. No information is available on how wide spread the private schools are and on the amount of monies spent in private schools in the UNESCO sources used in this study. However, enrollments include private enrollments.

2. The (gross) enrollment ratio at an education level is defined as the total enrollment at that level as a percentage of the population age group appropriate for that level. This ratio may exceed 100 percent if the number of enrollments include the younger or older age groups.

3. Ahuja and Filmer (1995) estimated educational attainments in 71 developing countries for 1985, 1990 and 1995. Their projections through 2020 show that educational attainment will grow most in the MENA and least in Sub Saharan Africa.

4. Female literacy rate and the female enrollment ratios in the MENA region are substantially lower than those for the Male. The gender disparity in the region is the highest in the world after South Asia (El-Sanabary, 1993 and Schultz, 1989). There are wide differences in the female enrollment ratios among the MENA countries. The tertiary level female enrollment ratio was less than 6 percent in Turkey while it was 15 percent in Egypt (El-Sanabary, 1993) in 1987.

5. The regressions from which the predictions are derived are given below. However, these regressions are not very reliable as indicated by the poor t and the F-statistics. The dependent variables are primary, secondary and tertiary enrollment ratios.

	Primary Enrollment Ratio	Secondary Enrollment Ratio	Tertiary Enrollment Ratio
Intercept	95.7*	52.7*	13.8*
GNP per capita	0.047	0.159	0.018
R^2	0.033	0.238	0.019
F-statistic	0.449	4.056	0.245
No of Observations	15	15	15

* Indicates significance at 5 percent level.

Source: Regressions are run using the data in Tables 1 and 4.

6. Schultz (1985) investigated the observation that school expenditures in some low and middle income countries did not increase as rapidly as enrollments using data for 89 countries from 1960 to 1980 and examined how educational opportunities were affected by the decline in central government expenditures in education and by the expansion in the size of the school-age cohort.

7. The reason for high unit costs in sub-Saharan Africa is the subsidies for housing, food, transportation and health care. Such student subsidies in Africa account half of public expenditures at the tertiary level of education.

8. For instance for Egypt the cost bias index in 1980 is constructed as follows using the data in Table 5:

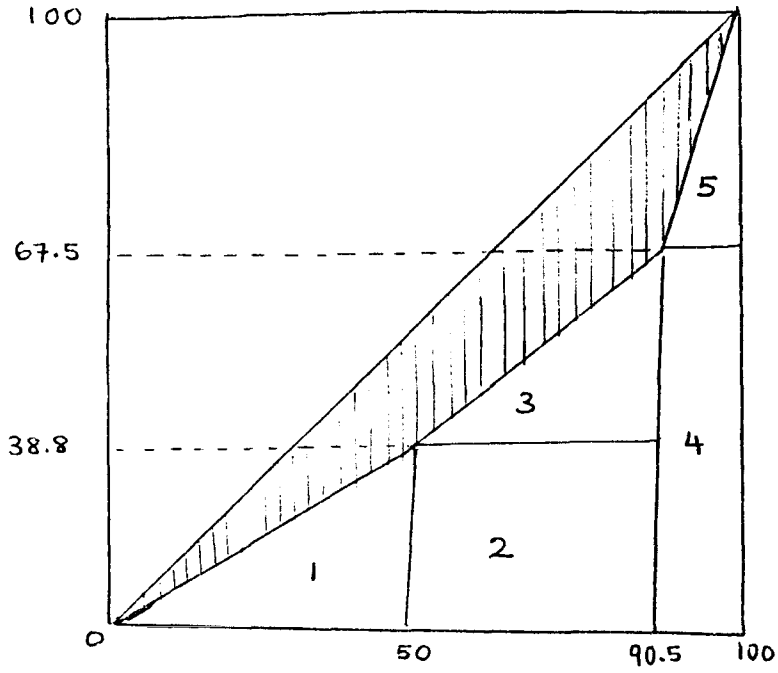
1/2(-13.8-55.1)-1/2(-55.1-50)=18.06

The same formula applies to all other countries. For further details on this index see Tan and Mingat (1992).

9. Gini coefficient as well as other criteria for measuring income inequality are explained in Lambert (1993, Chapters 2 and 3). Gini coefficient measures the degree of inequity on a scale of zero (complete equity) to one (complete inequity) which implies that the closer the Gini coefficient to zero the more equitable is the distribution and vice versa.

Gini coefficient is a static portrayal of inequities. In the context of income distribution it is often criticized because the coefficient will become smaller by a small income transfer from higher to lower income. But it is not sensitive to the levels of incomes between which transfer takes place. Suppose, for example that there are four people in the population with incomes of 1, 2, 3 and 4 dollars respectively. If a dollar is taken from the richest person and given to someone else, the Gini coefficient is reduced by the same amount whether the dollar is tranferred to the poorest person (resulting in a distribution of 2, 2, 3, 3) or to the next richest person (resulting in a distribution of 1, 2, 4, 3). The most commonsense notion of equality suggests that the former distribution is more equal than the latter. Drawing an analogy with our analysis implies that a redistribution of educational resources from higher education to either secondary or primary education will change the Gini coefficient by the same amount. That is, it is insensitive to whether the resources are transferred to the secondary or to the primary education.

10. Following example shows the computation of the Gini coefficient for Syria in 1980. The computations for other countries were done using the same approach. Using the data on the percent of population and the percent of resources allocated to the three levels (i.e. no schooling and primary, secondary and tertiary levels) of education we can draw the following Lorenz curve where the vertical axis shows the cumulative percent of resources and the horizontal axis shows the cumulative percent of population.



By definition the Gini coefficient is equal to 0.5 times the shaded area. The shaded area is equal to 0.5 minus the sum of the areas marked with 1, 2, 3, 4 and 5. This is given by = 0.5 - (0.094 + 0.163 + 0.06 + 0.064 + 0.015) = 0.102. Then, the Gini coefficient is = 0.5 (0.102) = 0.204.

11. Mingat and Tan (1985) report a Gini coefficient of 0.57 for MENA region in 1980. The figure we report is lower than theirs. This may be due to the possible differences in the countries included. Which and how many countries they included was not reported.

12. According to the Table 6, the Gini coefficients in 1990 were 0.58 in sub-Saharan Africa, 0.78 in South Asia, 0.72 in East Asia and Pacific, 0.52 in Latin America, 0.30 for Europe and 0.41 for OECD countries. These figures in 1990 were somewhat larger than in 1980 for all regions.

13. Mingat and Tan (1986: 267-268) provide the following distribution of enrollment and population by socioeconomic status around 1980 in the MENA countries where unspecified four MENA countries are included in the averaging:

	Percentage of Enrollment			Percentage of	Appropriation
	Primary	Secondary	Higher	total Population	Ratio Relative to Farmers
Farmer	33	1522		42	-
Manual workers and traders	43	57	31	48	1.6
White-collar	12	28	47	10	4.8
Total	100	100	100	100	

These figures indicate that 47 percent of the enrollments in higher education are students with white-collar background while people with the same background represent only 10 percent of the population. Farmers' share in the enrollments are smaller than their percent in the population. On average, about 4.8 times as much of the public education resources are appropriated by the white-collar group than the farmer group. Such figures indicate substantial inequity in the access to different levels of schooling by socioeconomic characteristics. This is a typical pattern in developing countries while in the developed countries percentages of enrollments at different levels of study by different socioeconomic groups are quite similar to their percentages in the total population.

14. Available information on returns to investment in education by level of study in the MENA countries are as follows:

		Social			Private		
Country	Year	Primary	Secondary	Tertiary	Primary	Secondary	Tertiary
Egypt 1988	-	-	-		5.4	5.45	9.2
Iran	1976	15.2	17.6	13.6	-	21.2	18.5
Israel	1958	16.5	6.9	6.6	27.0	6.9	8.0
Arabs	1980-82	-	-	-	-	base	30.2
	1988-90	-	-	-	-	base	50.8
Jews	1980-82	-	-	-	-26.8	base	33.8
	1988-90	-	-	-	-25.9	base	45.5
Morocco	1970	50.5	10.0	13.0	-	-	-
Tunisia	1980	-	-	-	-	13.0	27.0
Turkey	1968	-	-	8.5	-	24.0	26.0
	1987	-	-	-	2.6	7.6	14.0
Yemen	1985	2.0	26.0	24.0	10.0	41.0	56.0

Source: Psacharopoulos (1994) for all countries, except for Turkey, 1987 which are From Tansel (1994), Israel (1980-1990) which are from Klinov (1996) and for Egypt which are from Assaad (1994). The methodology employed in the computations is the "full" method as opposed to "earnings function" approach as described in Psacharopoulos. Tansel (1994) and Assaad (1994) figures are result of "earnings function" approach and they are simple averages of the figures for men and women and in case of Egypt different tertiary program types. For details see aforementioned studies and Tansel (1995).

Reallocation of educational expenditures among different levels of education have also been a concern on grounds other than equity. To improve the use of resources, reallocating educational expenditures towards the levels with the highest social returns is suggested in the literature recently, for instance by Psacharopoulos et al.(1986). In many developing countries social rates of return are higher at the primary level than at the higher leves of education. Information on the social rates of return to education in the MENA countries is limited. Available information which is summarized above suggests that the developing country patterns may be relevant for at least some of the MENA countries.

15. High private returns at the tertiary level may perpetuate intergenerational inequity in income. For instance, parents in Turkey who can afford to buy private instruction for their children will be able to place them in a tertiary level program with high private returns. This could aggravate the inequity in income distribution.

16. The direct costs are the monetary payments for transportation, uniforms, textbooks, stationary and incidentals. The indirect costs are the foregone income and other learning activities which increase with the level of education.

17. Turkey has experience since the 1960s with a subsistence loan scheme to needy students but there have been no evaluation of this program.

18. Eisemon and Salmi (1994) conclude that direct grants to meritorious but needy students constitute the most effective way of increasing participation in higher education.

19. Cumhuriyet, April, 1996. A special law stipulates the payment of 60 percent of the recurrent budgets of the private universities by the government. Thus, it is questionable if private universities provide a financial relief to the government.

20. Who will benefit from the limited number of spaces at the tertiary level education is an issue debated for sometime in Turkey (Toker et al. 1979 and Payaslioglu et al. 1990). Choosing students via competitive entrance examinations according to their ability to benefit from tertiary education was initially thought to be an equitable procedure. Then in the mid 1970s it was recognized that candidates from all regions and all secondary school programs do not have equal opportunities since the ability to learn depends on quality of prior education, socioeconomic and environmental factors. There are important socioeconomic differences among regions. In 1976 while 30 percent of the secondary school graduates in the Marmara region were placed in a tertiary level program of study, the same percentage was only 7.1 in the Eastern Anatolia. To compensate for the regional inequities regional quotas or regional passing points were suggested but not put into use. However, to compensate for the inequities due to the program concentration and the quality of the secondary schools a point advantage system was introduced which is still in use. This system gives point advantage to the students according to their last year performance in their respective high schools. In the 1995 round of the entrance examination it is recognized that more and more students are transfering from their special highschools to regular highschools in order to increase their point advantage. The top student of the 1995 first tier examination was such a student who moved from a high school with science emphasis to a regular high school during his last year in high school (Cumhuriyet, May 8, 1995).

It is also well known that only the upper-income class families can afford to buy private instruction for preparation of their children for the highly competitive university entrance examinations. Larger percent of successful entrants come from relatively high income families and educated parents [ÖSYM (1992)]. The analysis in this paper suggests generating funds to increase coverage and the quality of the primary and the secondary schools. In particular, increasing the numbers and the quality of the secondary schools in the

Eastern Anatolia region so that the students in this region and from various secondary school programs can compete at an equal basis with the students from the Western part of the country and from better quality programs. This will be a better solution to the problem of providing equitable access to the tertiary level education.

21. The lack of information on the labor market performance of the graduates of different programs is a serious shortcoming in the MENA region. Monitoring the labor market returns to education of different levels and programs of study can provide guidance on overall sectoral policy.

22. Educational Efficiency refers to the relationship between educational spending and outcomes. This important concept is recently explored in an article by Lockheed and Hanusheck (1994).

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Table 1. Enrollment Ratios (%) in the MENA Countries and the Major World Regions, 1965-1990

Country	Primary			Secondary			Tertiary			Adult Illiteracy
	1965	1980	1990	1965	1980	1990	1965	1980	1990	1990
Algeria	68	94	95	7	33	60	1	6.2	11.8	43
Bahrain	-	104	102	-	65	97	-	4.8	18.1	23[a]
Egypt	75	78	101	26	54	82	7	17.6	19.2	52
Iran	63	87	112	18	42	57	2	4.4	12.2	46
Iraq	74	115	111	28	57	48	4	9.3	13.8	40[a]
Israel	95	95	95	48	73	85	-	29.3	34.4	5[a]
Jordan	95	104	97	38	76	63	2	26.6	24.5	20[a]
Kuwait	116	102	93	52	80	85	-	10.8	13.9	27[a]
Lebanon	-	111	112	-	59	63	-	33.6	27.5	20[a]
Libya	78	-	-	14	-	-	1	8.0	18.0	36[a]
Morocco	57	83	66	11	26	34	1	6.0	10.2	51
Oman	-	58	103	-	14	57	-	1.0	6.2	-
Qatar	-	103	104	-	67	82	-	9.0	25.9	24[a]
S.Arabia	24	63	77	4	30	46	1	7.3	13.3	38
Syria	78	102	109	28	46	50	8	19.2	18.8	36
Tunisia	91	103	117	16	27	46	2	5.1	9.4	35
Turkey	101	96	113	16	35	51	4	6.1	14.8	19
UAE	-	89	115	-	52	69	-	2.3	10.6	-
Yemen A.R.	13	38	76	3	4	31	-	1.0	2.9	62
Yemen P.D.R.	-	65	88	-	18	21		2.3	1.8	-
Regional Averages:										
MENA	76	94	97	17	45	49	3	12	16	45
Sub-Saharan Afr.	41	57	68	4	16	17	0	1	2	50
East Asia, Pacific	88	89	127	-	48	49	1	11	5	24
South Asia	68	74	88	24	23	39	4	7	-	54
Europe, C. Asia	85*	97	101	45**	68	71	11**	14	16	16
Latin A. Caribbean	98	93	107	20	42	49	4	10	16	16
OECD Members	104	101	104	63	87.5	93	21	18	33	4
World	85	86	104	31	47	65	9	10	11	35

Notes : - not available.
* : Europe, Middle East, North Africa.
**: Europe.

Source: 1965: from World Bank (1992), Table 29.
1980: from Unesco (1993), Table 2-1.
1990: from World Bank (1993) and Unesco (1993).
The regional numbers are from World Bank (1982-84, 1992 and 1993).
Adult Illiteracy Rate: World Bank (1993). a: World Bank (1995)

Table 2. Share of Total Public Educational Expenditure in GNP, in the MENA Countries and the Major World Regions, 1965-1990. (%)

Country	1965	1980	1990
Algeria	4.0	7.8	8.1
Bahrain	-	2.9	4.8
Egypt	4.8	4.1	6.8
Iran	3.2	7.5	4.1
Iraq	5.3	6.4[a]	
Israel	4.7	7.9	8.9
Jordan	3.0	5.5[a]	4.3
Kuwait	3.0	5.6[a]	
Lebanon	2.2	-	
Libya	4.0	3.7	10.1
Morocco	3.8	6.1	5.5
Oman	1.3[b]	2.1	3.5
Qatar	9.0	4.7	7.6
S.Arabia	6.2	5.5	6.2
Syria	2.9	4.6	4.1
Tunisia	4.0	5.4	6.1
Turkey	3.7	2.8	3.1
UAE	1.3	1.3	1.9
Yemen A.R.	-	4.1[a]	-
Yemen P.D.R.	-	-	-
Regional Averages:			
MENA	3.9	4.9	5.7
Sub-Saharan Africa	2.3	4.4	4.2
East Asia, Pacific	3.2	3.5	3.5
South Asia	1.9	2.2	3.0
Europe, Central Asia	4.9	4.4	4.9
Latin America, Caribbean	3.6	4.5	4.1
OECD	4.6	5.9	5.8
World	3.5	4.3	4.5

Notes: : - not available.
a: for 1985. b: for 1971. c: for 1973.
Regional averages are simple arithmetic averages of the countries involved.
Sources: 1965: from Unesco (1978-79) Table 4-1.
1980 and 1990: from Unesco (1993) Table 4-1.

Table 3. Share of Total Public Educational Expenditure in the Total Public Budget, in the MENA Countries and the Major World Regions, 1965-1990

Country	1965	1980	1990
Algeria	14.8	24.3	27
Bahrain	22.4	10.3	-
Egypt	12.9	9.4	13.4
Iran	14.6	15.7	22.4
Iraq	23.1	-	-
Israel	9.8	7.3	10.2
Jordan	9.2	11.3	8.5
Kuwait	6.9	8.1	8.6[a]
Lebanon	15.5	13.2	8.5[b]
Libya	15.7	-	20.8
Morocco	16.8[f]	18.5	26.1
Oman	2.8[g]	-	11.1
Qatar	12.7	-	7.2
S.Arabia	13.0	8.7	17.8
Syria	12.4	8.1	17.3
Tunisia	24.4	16.4	14.3
Turkey	19.4	10.5	13.3
UAE	30.3[h]	10.4[c]	14.6
Yemen A.R.	5.1	15.8[d]	23.5[e]
Yemen P.D.R.	14.1	-	16.9
Regional Averages:			
MENA	14.4	12.5	15.6
Sub-Saharan Africa	15.5	16.2	15.7
East Asia, Pacific	15.1	13.2	15.3
South Asia	10.4	9.1	9.3
Europe, Central Asia	8.8	14.2	9.1
Latin America, Caribbean	17.4	16.5	14.9
OECD	15.9	14.1	13.4
World	13.9	13.7	13.3

Notes: - not available
a: for 1989, b: 1988, c: for 1985, d: for 1981 e: for 1986, f: for 1970, g: for 1971, h: for 1973
Regional averages are simple arithmetic averages of the countries involved.

Sources: 1965: from Unesco (1978-79), Table 4-1.
1980 and 1990: from Unesco (1973) Table 4-1.

Table 4A. Unit Cost in Terms of GNP Per Capita in the MENA Countries and Major World Regions, 1980

Country	Primary	Secondary	Tertiary	GNP per capita (dollars) 1980
Algeria	0.03	0.09	1.19	2070
Egypt	0.09	0.22	1.39	500
Iran	0.16	0.35	1.46	2210
Iraq	0.14	0.27	1.65	-
Israel	0.18	0.35	1.85	5750
Jordan	0.09	0.25	1.26	2181[a]
Kuwait	0.17	0.32	1.35	19200
Libya	0.09	0.25	1.48	-
Morocco	0.19	0.56	1.92	-
Oman	0.35	0.98	1.97	990
Qatar	0.46	1.20	2.11	3540
S.Arabia	0.45	1.19	1.92	-
Syria	0.09	0.27	1.49	14250
Tunisia	0.05	0.22	1.35	1540
Turkey	0.14	0.34	1.65	1360
UAE	0.22	1.06	2.04	1550
Yemen	0.09	0.29	1.36	32210
MENA	0.18	0.48	1.61	2380*
Sub-Saharan Africa	0.19	0.38	5.78	720
East Asia, Pacific	0.13	0.24	1.32	380
South Asia	0.11	0.23	1.27	250
Europe	0.26	0.33	0.62	-
Latin America, Caribbean	0.07	0.29	0.49	2130
OECD	0.31	0.49	1.12	11030
World	0.18	0.35	1.75	2570

Notes and Sources: See Table 4-B.

Table 4B. Unit Cost in Terms of GNP Per Capita in the MENA Countries and Major World Regions, 1990

Country	Primary	Secondary	Tertiary	GNP per capita (dollars) 1990
Algeria	0.12	0.25	1.39	2380
Egypt	0.35	0.89	1.65	660
Iran	0.25	0.58	1.72	2370
Iraq	0.28	0.88	1.65	-
Israel	0.35	0.97	1.98	11460
Jordan	0.92	0.43	1.65	1250
Kuwait	0.29	0.89	1.55	12600
Libya	0.22	0.88	1.22	7170**
Morocco	0.35	1.32	2.02	1020
Oman	0.63	1.18	2.14	5030
Qatar	0.82	1.64	2.22	-
S.Arabia	0.62	1.35	2.11	6600
Syria	0.35	0.85	1.49	970
Tunisia	0.12	0.36	1.35	1430
Turkey	0.26	0.87	1.97	2230
UAE	0.68	1.36	2.01	21610
Yemen	0.16	0.96	1.62	520[a]
MENA	0.40	0.92	1.74	1990*
Sub-Saharan Africa	0.26	0.49	5.92	520
East Asia, Pacific	0.19	0.18	1.75	600
South Asia	0.17	0.13	1.73	350
Europe	0.31	0.28	0.92	3100*
Latin America, Caribbean	0.12	0.34	1.16	2280
OECD	0.38	0.19	1.15	20570
World	0.26	0.36	2.05	4010

Notes: * Average for only 10 countries.
** for 1985

Unit costs are computed for each of the countries. The regional figures are simple arithmetic averages of the figures for the countries involved. For coverage see the list in the Appendix. Regional GNP per capita figures are computed using the Atlas method as indicated in the sources below.

Sources: For GNP per capita: World Bank (1995), Table 1 and country tables. a: World Bank (1992).
Figures for unit costs in terms of GNP per capita are computed from the data obtained from Unesco (1993) and World Bank (1990-92).

Table 5.A. Deviations of Unit Costs in Terms of GNP per capita from the Regional Mean in the MENA Countries, 1980, (%)

	Primary	Secondary	Tertiary	Index of Cost Bias Toward Higher Education
Algeria	-83	-82	-26	29
Egypt	-50	-55	-14	18
Iran	-11	-29	-10	1
Iraq	-22	-45	2	12
Israel	0	-29	15	7
Jordan	-50	-49	-22	14
Kuwait	-6	-35	-17	-5
Libya	-50	-49	-8	21
Morocco	6	14	19	7
Oman	94	100	22	-36
Qatar	156	145	31	-62
S.Arabia	150	143	19	-66
Syria	-50	-45	-8	21
Tunisia	-72	-55	-16	28
Turkey	-22	-31	2	12
UAE	22	116	26	2
Yemen	-50	-41	-16	17

Table 5.B Deviations of Unit Costs in Terms of GNP per capita from the Regional Mean in the MENA Countries, 1990, (%).

	Primary	Secondary	Tertiary	Index of Cost Bias Toward Higher Education
Algeria	-69	-72	-20	25
Egypt	-10	0	-5	3
Iran	-36	-35	-1	18
Iraq	-33	-1	-5	12
Israel	-10	9	14	13
Jordan	136	-52	-5	-68
Kuwait	-26	0	-11	8
Libya	-44	-1	-30	7
Morocco	-10	48	16	14
Oman	62	33	23	-18
Qatar	110	84	28	-40
S.Arabia	59	52	21	-18
Syria	-10	-5	-14	-1
Tunisia	-69	-60	-22	24
Turkey	-33	-2	13	24
UAE	74	53	16	-28
Yemen	-59	8	-7	26

Sources: Authors' computations using data in Table 4A and 4B.

Table 6A. Distribution of Resources by Terminal Level of Schooling in the MENA Countries and Major World Regions, 1980

Country	No Schooling & Primary Education		Secondary Education		Tertiary Education		Gini Coefficient
	% POP	% RES.	% POP	% RES.	% POP	% RES.	
Algeria	63.4	57.5	34.0	25.2	2.6	17.3	0.186
Egypt	37.8	-	50.0	69.1	12.2	30.9	0.726
Iran	87.0	41.7	10.5	38.1	2.5	7.1	0.312
Iraq	44.8	47.5	50.0	17.3	5.2	24.1	0.335
Israel	-	33.7	-	29.2		24.8	-
Jordan	18.1	-	72.0	75.1	9.9	22.8	0.315
Kuwait	81.0	29.5	11.6	41.9	7.4	16.5	0.212
Libya	-	-	-	-	-	-	-
Morocco	54.0	35.4	37.0	46.3	9.65	18.3	0.317
Oman	48.0	27.6	43.0	25.0	9.1	43.0	0.814
Qatar	57.0	18.6	39.0	32.0	8.25	48.0	0.798
S.Arabia	52.0	24.0	43.0	37.0	3.25	41.0	0.872
Syria	49.5	38.8	41.0	28.5	9.5	32.7	0.204
Tunisia	64.5	41.2	32.0	36.6	3.5	20.5	0.529
Turkey	58.9	43.7	37.0	22.9	4.1	28.3	0.625
U.A.E.	47.0	31.0	40.4	25.0	11.2	41.6	0.782
Yemen	63.0	47.6	32.0	17.4	2.67	3.9	0.486
MENA	51.6	40.0	38.3	35.4	6.7	26.3	0.468
Sub-Saharan Africa	81.0	46.0	17.0	37.4	3.5	18.7	0.672
East Asia, Pacific	54.0	23.9	37.0	29.7	11.2	47.2	0.571
South Asia	79.5	26.9	18.0	35.1	6.1	41.7	0.701
Europe	47.0	32.4	35.0	43.8	19.0	27.7	0.272
Latin A.Caribbean	53.0	21.6	32.0	47.7	13.2	34.9	0.489
OECD	51.0	39.2	39.0	33.6	16.9	26.1	0.392
World	59.6	32.9	30.9	37.5	10.9	31.8	0.509

Notes and Sources: See Table 6.B.

Table 6B. Distribution of Resources by Terminal Level of Schooling in the MENA Countries and Major World Regions, 1990

Country:	No Schooling & Primary Education		Secondary Education		Tertiary Education		Gini Coefficient
	% POP	% RES.	% POP	% RES.	% POP	% RES.	
Algeria	27.5	28.5	64.0	25.5	8.5	17.3	0.365
Egypt	12.0	-	78.0	70.2	10.0	29.8	0.281
Iran	28.8	33.2	67.0	39.2	4.2	13.6	0.467
Iraq	44.0	47.3	46.0	27.8	10.0	20.6	0.489
Israel	-	32.0	-	32.3	-	18.9	-
Jordan	68.0	-	16.0	64.4	16.0	33.0	0.412
Kuwait	71.0	48.7	20.0	20.2	9.0	16.7	0.782
Libya	-	-	-	-	-	-	-
Morocco	49.0	32.9	35.2	45.2	12.1	16.3	0.193
Oman	41.0	28.0	42.0	30.0	10.7	44.6	0.691
Qatar	53.0	27.0	39.0	37.0	9.87	42.7	0.715
S.Arabia	68.0	22.0	24.0	41.2	5.23	40.65	0.792
Syria	47.5	46.4	44.0	27.7	8.5	23.4	0.66
Tunisia	38.3	39.8	55.0	36.4	6.7	18.5	0.569
Turkey	33.0	58.6	56.0	27.4	11.0	14.0	0.627
UAE	41.0	24.0	48.0	37.0	10.2	43.7	0.792
Yemen	67.0	47.6	26.0	17.4	4.7	3.9	0.417
MENA	45.9	36.9	44.0	29.6	9.1	26.9	0.550
Sub-Saharan Africa	74.9	39.6	24.3	50.0	4.7	9.6	0.582
East Asia, Pacific	47.2	20.9	43.5	30.3	13.1	42.5	0.723
South Asia	62.9	19.8	32.1	51.7	7.1	30.3	0.785
Europe	53.0	39.2	35.0	33.7	23.1	33.0	0.297
Latin A. Caribbean	49.0	27.0	41.9	49.7	14.3	27.2	0.521
OECD	45.7	38.2	39.0	31.9	19.6	35.3	0.413
World	54.1	31.7	37.1	40.5	13.0	29.0	0.553

Notes: The figures in this table are computed for each of the countries. The regional figures are simple arithmetic averages of the countries involved. For coverage see the list in the Appendix.

Sources: See Notes to Table 4.

Appendix A:

Regional Coverage: The list of the countries included in the computations for each region are as follows: These computations for the unit costs and for the Gini coefficients are available from the authors upon request.

1. MENA: Algeria, Bahrain, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Qatar, Saudi Arabia, Syria, Tunisia, Turkey, UAE, Yemen Arab Republic.

2. Sub-Saharan Africa: Burundi, Comoros, Ethiopia, Kenya, Lesotho, Madagascar, Malawi, Mozambique, Rwanda, Somalia, Sudan, Tanzania, Uganda, Zaire, Zambia, Zimbabwe, Angola, Mauritius, Namibia, Swaziland, Botswana, Mayotte, Reunion, South Africa, Benin, Central, African, Rep. Chad, Equatorial, Guinea, Gambia, The Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe Sierra Leone, Togo, Cameroon, Cape Verde, Congo, Gabon.

3. East Asia and Pacific: Cambodia, China, Indonesia, Lao PDR, Myanmar, Viet Nam, Korea, Dem. Rep., Malaysia, Micronesia, Fed. Sts., Mongolia, Papua New Guinea, Phillippines, Thailand, Tonga, Vanuatu, Western, Somao, American, Samoa, Guam, Korea, Rep. Macao, New Caledonia, Australia, Japan, New Zealand, Brunei, French, Polynesia, Hong Kong, Singapore, OAE.

4. South Asia: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka.

5. Europe: Gibraltar, Greece, Isle of Man, Malta, Portugal, Andorra, Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, San Marino, Spain, Sweden, Switzerland, United Kingdom.

6. Latin America, Caribbean: Belize, Bolivia, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Rep., Ecuador, El Salvador, Grenada, Guatemala, Jamaica, Panama, Paraguay, Peru, St. Lucia, St. Vincent, Antigua and Barbuda, Argentina, Aruba, Barbados, Brazil, French Guiana, Guadeloupe, Martinique, Mexico, Netherlands Antilles, Puerto Rico, St. Kitts and Nevis, Suriname, Trinidad and Tobago, Uruguay, Venezuela, Guyana, Haiti, Honduras, Nicaragua, Bahamas, Bermuda, Virgin Islands (US).

7. OECD: Canada, United States, Japan, New Zealand, Australia, Austria, Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom.

Appendix B:

Table 1: Actual and Predicted Enrollment Ratios, 1990

Country	Primary		Secondary		Tertiary	
	Actual	Predicted	Actual	Predicted	Actual	Predicted
Bahrain	102	99	97	64	18.1	15.0
Algeria	95	97	60	57	11.8	14.2
Egypt	101	96	82	54	19.2	13.9
Iran	112	97	57	57	12.2	14.2
Israel	95	101	85	71	34.4	15.8
Jordan	97	96	63	55	24.5	14.0
Kuwait	93	102	85	73	13.9	16.0
Morocco	66	96	34	54	10.2	14.0
Oman	103	98	57	61	6.2	14.0
S.Arabia	77	99	46	63	13.3	15.0
Syria	109	96	50	54	18.8	14.0
Tunisia	117	96	46	55	9.4	14.0
Turkey	113	97	51	56	14.8	14.2
UAE	115	105	69	87	10.6	17.6
Yemen,A.R.	76	96	31	54	2.9	13.9

Source: Predictions are derived from the regressions given in Note 5 which are obtained using the data in the Tables 1 and 4B.

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